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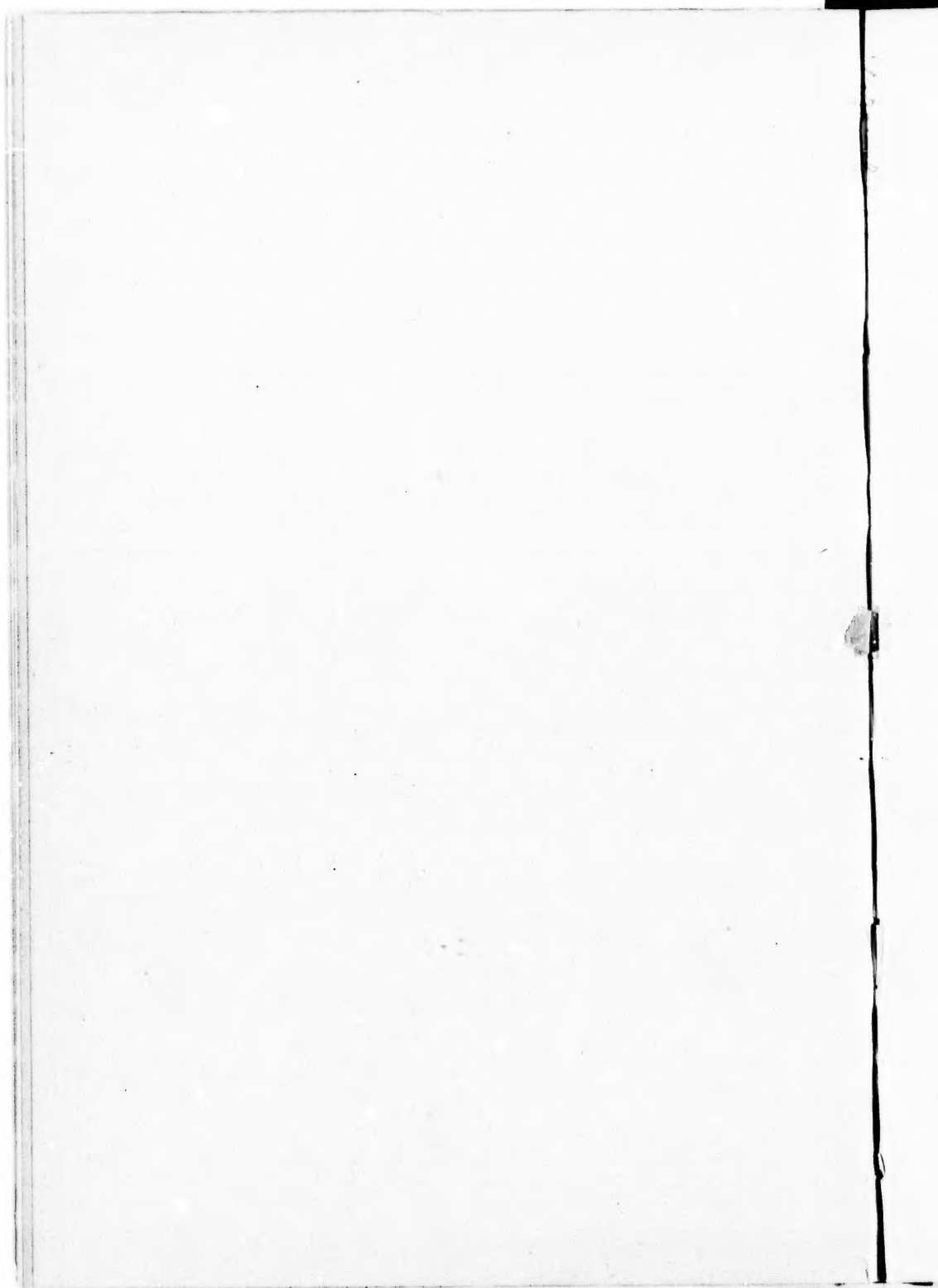
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ENTEROPTOSIS AND ITS RELATION TO FUNCTIONAL DISTURBANCES

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The condition described by the term Enteroptosis has been attracting an increasing degree of attention during the past few years. Some years before Glénard's monograph appeared, Virchow, Leube and others described the anomalous downward displacement of different abdominal organs, but in 1885 Glénard formulated his views upon this subject, accurately describing the condition of the abdominal viscera and the nervous phenomena connected therewith. Among the features prominent in this symptom-group which Treves is pleased to call "that medley of symptoms," are, downward displacement of the stomach, a movable right kidney, various digestive disturbances and often very typical neurasthenic symptoms. So sanguine was the pioneer observer among the French, and indeed among all writers, that he had discovered a solution to the difficult problem of many cases of neurasthenia, that he says at the close of one of his very early monographs upon the subject in a free translation as follows :—"I can affirm that the physician who will follow my directions and strive to verify my statements in such cases will find in his practice the satisfaction which a positive diagnosis gives to both physician and patient from which alone a proper prognosis can be made, and that satisfaction, the greatest of all, which directs the treatment and avoids for the patient the trial upon him of so many remedies, while at the same time it secures him relief and prevents the physician himself from falling into therapeutic scepticism."

The next step of importance in the advancement of our knowledge on this subject is marked by the appearance of Ewald's writings in 1890, and those of Pick, Boas, Kumpf, and Hufschmidt in 1892. With Ewald many of the Germans took sides against the French school on several points to which we may refer later. The German school claims that Glénard had reference but to the intestines in his descriptions, while, associated with ptosis of these parts, displacement of other organs was common. By the German school, the application of this term is broadened and more comprehensive. Schwerdt believes he is justified in speaking of enteroptosis when at least two organs are found prolapsed.

It may be mentioned here, however, that Ewald's methods of investigation were more accurate than those of Glénard—for while it appears the latter did not employ any means of inflating the stomach or intestines, Ewald claimed that such was a necessity and thus by Glénard's method of diagnosis, mistakes were likely to creep in.

Treves, in England, has contributed to the study of the symptomatology and treatment of this disease, while Osler was the first in America to include this subject in a text-book in 1892.

Glénard's disease or Enteroptosis or Splanchnoptosis, as it may be called, according to Stiller's suggestion, should be considered independently of those conditions of visceral displacement resulting from former inflammatory process, such as frequently occur about the genital organs, of females and result in pulling down portions of intestine or an isolated organ. This view, however, is open to the criticism, that, upon the normal position of any one organ the position of the others largely depends, and it is possible to have very general ptosis result from such a cause associated with all those signs incident to the true disease. It is acknowledged, however, that in a large number of such instances the signs of the true disease are not prominent in the clinical picture and may be absent entirely.

Meinert urges that the prominent pendulous abdomen resulting from numerous pregnancies "has nothing whatever to do with Glénard's disease. Such an abdomen holds a dilated stomach, not a dislocated one." However conflicting these views may be concerning the classification of cases under this head, it may be accepted as safe teaching, at least for the present, that (I.) Enteroptosis may exist without subjective signs, that (II.) the Enteroptosis of Glénard is associated with the most pronounced subjective signs, chiefly of a neurasthenic type, that (III.) in those cases where a pendulous abdomen is present the nervous features of the case are less pronounced than in thin subjects with greatly flattened belly walls, and that (IV.) Enteroptosis arising from inflammatory processes in the abdomen may be typically characteristic.—(Treves).

The view of Mathieu is thus expressed, that Enteroptosis is of two varieties, (I.) the form which shows itself plainly from without by a pendulous abdomen and is rarely found associated with nervous manifestations. The second form (II.) is that in which the abdomen is thin and flat and where the neurotic element is very prominent,—the internal variety.

The organs displaced in this disease may be all those found below the diaphragm. Most frequently, however, the colon and small intestines, the stomach, the right kidney and the liver are found in altered relations. It is not rare to find the left kidney also displaced; the spleen

very rarely is found away from its normal position while the pancreas has been once recorded as dragged down (Rokitansky, Treves).

About the subject of the Etiology of Enteroptosis much interest centres and numerous theories have been advanced to account for its occurrence. Kuttner and Dyer affirm that no cases of congenital gastroptosis have been observed. Stiller (1896) says that Enteroptosis is a congenital anomaly. It occurs in those whose muscles are soft, whose bony organisation is delicate and upon them but a small deposit of fat may be found. There is usually found in such patients a floating tenth rib.

Enteroptosis is found in men as well as in women, although much less frequently. Two of the cases herewith reported were male patients, although the percentage of men is much smaller in a large series of cases as shewn by Glénard, Meinert, Schwerdt and indeed by all observers. The French writer reports 404 cases, 306 of which were among women; in Meinert's series, 88—90 per cent. were females, while in Schwerdt's series of 95 observations, 89 were in women. Pregnancies and tight lacing are the chief causes, according to Manges, for this great difference between the sexes.

In answering the question as to the etiology of the condition, Dr. Schwerdt, of Gotha, states that the essence of this disease is to be sought for in an atony of the whole nervous system which affects the muscles of the whole body. As active causes of such a condition he enumerates heredity, unhealthful methods of living and working, all chronic diseases, the wearing of corsets and lack of care in the pregnant state and in childhood. He regards this disease as a *constitutional ailment*.

The abdominal organs are kept in place very largely by a certain degree of intra-abdominal pressure, and when this is greatly diminished, ptosis is the result. The corset contributes to this condition, among other ways (I.) by diminishing the tone of the body walls and suspensory ligaments of the organs, and (II.) by interfering with the mechanical and chemical functions of digestion thus impairing nutrition. The teaching of Schwerdt upon this point is more theoretical than that of Meinert, who regards the corset as a means of altering the relation of the parts chiefly by direct pressure.

There is doubtless no one cause or group of causes which will suffice to explain the occurrence of this disease or condition. We may conclude then that :—

1. The intra-abdominal pressure is altered.
2. Many causes contribute to this end.
3. The organs may be displaced by being pulled down.
4. In all probability a congenital predisposition exists in the con-

formity of thorax and the character of fibre entering into the supporting tissues of the organs.

The *diagnosis* of Enteroptosis, since the adoption of the method recommended by Ewald and others, is a matter of comparative simplicity. On the inspection, the contour of the abdomen may suggest a condition of Splanchnoptosis. The epigastrium is hollowed, the two lower quadrants of the abdomen, even with the patient in a recumbent position, are often quite prominent—while, as pointed out by Dr. J. C. Webster in a personal observation, the recti abdominis may be seen widely separated in thin subjects when attempting to assume an erect position. In a few cases I have seen the position of a displaced stomach indicated by the peristaltic waves extending from left to right. It is necessary, however, to distinguish between a displaced and dilated stomach. In brief, we may say that it is all important to determine :—

1st. the position of the lesser curvature of the stomach.

2nd. the relation of the greater curvature to the lesser.

In all cases where one can demonstrate the lesser curvature some degree of displacement exists, and in proportion as the lesser curvature approaches the umbilicus or falls below it, so is the degree of displacement. Dilatation, as the result of atony, is a usual accompaniment of gastropotosis and a transverse measurement of from four to five and a half inches might still be within normal limits, and would not indicate dilatation.

The hypogastrium may present a dull note from the close prolapse of the small intestine. A point upon which Glénard laid great stress is termed by him “la corde colique transverse,”—by this he described a small band which ran horizontally across the abdomen about two inches or so above the umbilicus. He regarded this transverse band as the “colon transversum.” Upon this point there is much diversity of opinion. The German teachers, led by Ewald, claim that the French teaching is wrong and that the “corde colique transverse” was the pancreas. According to Frickhinger, who saw the intestine of a patient with Enteroptosis inflated by Ziemsen, it is regarded as the transverse colon, the hard cord, during the process, becoming changed into a cushion-like and elastic body. On the other hand Ewald cites a case reported by Krez in which an autopsy was done and the “corde colique transverse” was apparently the pancreas. In Case No. 3 (Mrs. M.), the “corde colique transverse” was plainly felt and during a laparotomy done upon this patient, it was shown to be the pancreas.

Palpation of the abdomen usually reveals movable kidney, methods of examination for which are known to all. The liver, when displaced, is usually more prominent in the epigastrium and may be rotated upon its longest axis, the upper line of dulness falling much below normal.

Another point upon which Glénard laid special stress, as one of diagnostic worth, and which is to be applied in all cases of Enteroptosis he described under the phrase "*l'épreuve de sangle*." This test is applied by the examiner, standing behind the patient who also is in the erect position, and with both hands laid flatly over the lower zone of the abdomen, a firm but gentle pressure is made upwards. In the great majority of cases this affords considerable relief to the distressing dragging pain which is felt in the epigastrium and abdomen and which is one of the patient's chief complaints. At the same time the result of this test is an index to treatment.

As illustrative of many of the above points in diagnosis, the following cases may be briefly described. With two exceptions they are from personal observation, and for these two I am greatly indebted to Dr. James Bell and Dr. C. F. Martin.

Case No. 1, C., male, æt. 25, admitted June, 1899. Complaints were of pain in right side of abdomen, loss of weight, jaundice and of recurrent attacks of indigestion. In February, 1898, the patient had his first attack of severe colic, which was referred to the liver—and regarded as hepatic colic. During the past ten years he had frequent pain in the region of stomach, especially marked after walking, standing or riding. These attacks were brief and on two occasions were followed by jaundice. After the attack above referred to (February, 1898), the patient was comparatively well for about a year with the exception of slight "indigestion" and a dull heavy feeling at times.

In January, 1899, another attack similar to the first occurred and since then, every two or three weeks, this has been repeated, although each attack was of a much milder type. The jaundice was associated with clay-colored or colorless stools and high colored urine and he remarked that on several occasions when the attack of abdominal pain was passing off the urine, which had been scanty, became more copious and light colored. The loss of weight was about thirty-three pounds. The patient was of a constipated habit. Quietness in bed relieved both constipation and abdominal distress.

The patient is tall and slender, somewhat nervous in temperament; the abdomen is flat, the right kidney is freely movable and the stomach is displaced as shown in the drawing made from the gastrodiaaphane; the corde colique transverse is faintly palpable. (See Fig. 1.)

Case No. 2. Mrs. G., æt. 66 (Hospital No. ...). Complaint of pain in stomach. The patient says that during the past twelve years she has been subject to abdominal pain coming on about two hours after food and lasting for three or four hours. These attacks have recurred at intervals varying from three or four months to one or two weeks. Great care has been necessary with her diet in order to avoid an attack. She

is the subject of flatulence and constipation during these attacks. The pain has been felt chiefly in the epigastrium but extends around the back on the right side. She had never been jaundiced before coming under observation and there is no history of over-indulgence in food or drink or past stomach disorder, but she has partaken freely of condiments.

Her condition was one of emaciation, muscles, small and flabby; mental state was irritable; the circulatory and respiratory systems were negative. On examination of the abdomen one observed that it was thin-walled and very lax. There was the epigastric depression extending down to the umbilical level, below which fulness was manifest. The spleen and liver were not palpable, while both kidneys might be readily felt. Inflation of the stomach and illumination of the same were confirmatory and showed marked displacement downwards and to the right with no dilatation as shewn by the diagram (Fig. 2). The lesser curvature was just above the umbilicus. A test breakfast showed no hydrochloric acid and no lactic acid. The patient was under treatment for some days in the hospital upon a fairly liberal diet of gruel, sweetbreads, fish, toast and tea, somatose, and koumiss. Faradism was also applied to the stomach. While under observation a severe attack of abdominal pain supervened and on the following day the patient was markedly jaundiced with bile in the urine. The degree of jaundice diminished to deepen again only after another attack of pain.

This case illustrates the following points :—(I.) Marked digestive disturbances for years; (II.) Nervous irritability; (III.) Constipation; (IV.) Epigastric pain followed by jaundice.

Case No. 3. Mrs. M. A. M., *æt.* 36. (Hospital Nos. 1,024, 4,029.) This patient complained of "disease of the liver, kidney and bladder." For years she had suffered with pain in right hypochondrium; she had had no acute illness; she had borne two children, both of whom died in infancy; one year previous to her admission to the hospital she suffered from severe abdominal pain which was referred to the right flank and was attended by "swelling and tenderness over the part." This attack was but temporary and fully subsided. Since that time, however, she has had occasional vomiting and felt chilly sensations.

Present condition :—One was struck with the expression constantly present on this patient's face. It was one of anxiety and distress; she was of a dark complexion, thin and hollow-eyed, and I remember well when going about the wards for the first time after she came into the hospital. She presented the striking picture of a *neurasthenic* patient. Discovering *neurasthenia* written so plainly on the face of this patient, I immediately examined the digestive system and abdomen with the gratifying result herewith given in detail. Her tongue was

flabby, teeth poor and appetite capricious. She was often troubled with flatulence, the bowels were constipated, the abdomen was flat and flaccid. Some general hyperæsthesia was present, but especially manifest over the right hypochondrium and hypogastrium; the epigastrium was flat and hollowed, the lower abdominal zone, if anything different, was comparatively prominent; on deep inspiratory movements one noticed in the epigastrium and extending across this area, a wave passing from above downward to a point about two inches above the umbilicus and one could feel a rounded body quite superficially. The right kidney was readily palpable and moved freely on inspiration and could be pushed up under the ribs.

The usual method of locating the stomach was resorted to and it was found, as in the diagram (Fig. 3) markedly displaced. The pelvic organs were normal.

Case No. 4. Mrs. L. C., æt. 38. (Hospital No. 6,515.) Admitted June, 1897. Patient complained of gastric distress constantly present, constipation, aching back and palpitation of heart. The patient believes her present illness began three years before and during the past few months it had been greatly aggravated. Although always of a highly neurotic nature, she had been specially so during the past three years. In March, 1897, her menstruation ceased. Gastric distress, flatulence, pyrosis and constipation describe her digestive disturbances.

Present condition:—The patient's nutrition was only fair as she showed signs of emaciation; her facial expression was troubled and she was decidedly neurotic. Anxious introspection characterised her mental state. Vasomotor instability manifested in visible flushing of her face and body, was a feature of her case. There were no stigmata of hysteria. The respiratory and circulatory organs showed no signs of disease. The generative organs were not diseased; she had a left inguinal hernia. The abdomen was very lax with tenderness on pressure about two inches below ensiform cartilage; the liver and spleen were not displaced. The right kidney was palpable and movable to a slight extent. The chief interest centres upon the stomach. A test breakfast was given but no contents could be gained thereafter. Gastric inflation revealed downward displacement of the stomach, the greater curvature presented three inches above the symphysis pubis, the lesser curvature was seven inches above this point, thus showing a transverse measurement of the stomach of four inches (Fig. 4).

Remarks:—These two cases, Nos. 3 and 4, illustrate in the most striking manner the neurasthenic symptoms associated with this condition of the abdominal organs; the facial aspect, the complaints, the introspection, the self-observation and the results of treatment were typical. In No. 3 treatment consisted first in nephrorraphy which

availed nothing. The "corde colique transverse" was well marked in this case and was misleading, inasmuch as it was movable and associated with loss of flesh and the absence of free hydrochloric acid in the stomach contents after the test breakfast. It was strongly suggestive of malignant disease of the stomach, but an exploratory incision showed it to be the pancreas. The wound healed but the patient was not improved.

The treatment in Case No. 4 was more satisfactory, although no operation was done, under massage (general and local), suggestion and reassurance, tonics and mild aperients and the wearing of a bandage, much improvement was made and though she has not continued as well as ever, yet she is leading a fairly active life in comparative comfort.

Case No. 5. Mde. St. D., æt. 48. (Hospital No. 6,504.) Complaints were of pain in loins and a feeling of weight and distress in upper abdominal zone which was worse on the *left* side. The patient had borne thirteen children, and at the second pregnancy twins were born. Ever since this event the abdomen has been prominent and flabby. During the past twelve years flatulence had frequently troubled her; during the past five or six years vertical headaches and distress in upper part of abdomen were complained of. While always nervous she has become much more so during the past few years.

Examination of the abdomen showed it to be one of "*hängebauch*," the walls were very flaccid and pendulous, the recti abdominis were widely separated and between these muscles one could readily feel the prolapsed contents of the abdomen. On examination of the different organs of the abdomen one found the normal area of liver dulness a resonant one. This organ was movable and could, at times, be easily felt between the recti; again it was with difficulty made out, possibly becoming rotated upon its transverse and longest axis. The left kidney was felt on deep inspiration, while the spleen and the right kidney could not be felt. The stomach, on inflation, was dislocated downwards, while the measurement of the organ when distended with gas indicated some degree of dilation as well. The lesser curvature was three inches above the umbilicus, the greater four inches below this, giving the transverse measurement of the stomach as seven inches. (Fig. 5.)

This case illustrates a ptosis of the liver with gastropotosis occurring in a woman with a multiple of pregnancies and in whom the recti were widely separated, the stomach dilated and nervous symptoms manifestly exaggerated.

Case No. 6. Mrs. K., æt. 40. (Out patient.) Showed displaced stomach, freely movable and tender right kidney, with occasional vomiting; epigastric pain and tenderness with pulsating area on the left of the middle line; some frequency of micturition. *L'Epreuve de Sang* was most satisfactory in her case, and the wearing of an abdominal support was found very helpful. (Fig. 6.)

Returning now to the second part of our subject, we may say that the chief functional disturbances to which Enteroptosis is related are :—

1. Neurasthenia, including digestive disturbances.
2. Anæmia.
3. Constipation.
4. Jaundice.
5. Gastric dilatation.
6. Myxœdema, Scleroderma and Exophthalmic Goitre.

The theories concerning the symptoms associated in most instances with the altered position of the abdominal organs are numerous, but for convenience of consideration we may classify them under three headings :—

- 1st. There is the mechanical theory from Glénard.
- 2nd. What may be termed the neuro-mechanical theory of Meinert.
- 3rd. The neuro-intoxication theory of Schwerdt.

The first theory, although not purely a mechanical one, is chiefly such. It does not ask for any antecedent nervous cause, but it implies a weakness of the suspensory ligaments of the transverse colon, especially the colico-hepatic ligament. The descent, Glénard claims, begins at the hepatic flexure and the other events incident to the disease follow, viz.:—The entero-stenosis due to a kinking of the colon at the point of prolapse, the *corde colique transverse*, the gastropstosis, the constipation, the auto-intoxication, the neurotic manifestations, etc.

The second theory, which we may characterise as the neuro-mechanical one, is advanced by Meinert; in short, Meinert attributes the symptoms associated with "dropping of the viscera" to the constant stimulation and irritation of the sympathetic nerves, as a result of pulling and stretching of these nerve fibres. This has its deteriorating effect upon the blood, through the blood-forming organs, and the general nervous system, and hence chlorosis, neurosis and all sorts of vasomotor disturbances.

The third theory is that of Schwerdt already alluded to in speaking of the etiology of the disease. The nervous system is primarily at fault—the fibre of the individual is *toneless*; the functions of the abdominal muscles, both parietal and visceral are not normal, intra-abdominal pressure is lessened—ptosis takes place. There is stasis in the blood and lymph vessels, the bowel contents decompose, the excretions are not carried off, absorption of poisonous products goes on and auto-intoxication results—dyspeptic manifestations, neurasthenia, headache, anæmia, lack of energy, palpitation, etc., etc. Polyuria follows as a consequence, while Graves' disease, scleroderma and myxœdema, are theoretically possible as results of visceral irritation and intoxica-

tion. However obscure the causes of the three diseases may be, few are ready to accept this as an explanation of their etiology.

When we consider the altered relation of the abdominal viscera in a condition of ptosis, the interference with the motor function of the intestine, the great tendency to constipation, the resulting distress and pain, it is not difficult to understand how a state of mental depression or nervousness and of general nerve weakness may result. In whatever relation these two conditions may really be, it is not hard to understand that enteroptosis may be a direct cause of the neurasthenia.

Chlorosis and enteroptosis are doubtless related in both respects.

Chlorosis on the one hand has been regarded as due to a neurosis, on the other as an intoxication, and it would seem that in the teaching of Meinert some ground for both these theories existed. The left-sided pain is common in chloro-anæmia, and Taylor refers this pain to distention of the colon in an organ displaced downwards. In one of our cases of marked enteroptosis the pain was constantly referred to the left side of the abdomen in the upper quadrant.

Jaundice in such cases may be due to :—

1. Passive congestion of a displaced liver and its results upon the bile passages.
2. To obstruction in the duodenum.
3. To direct pressure upon the bile ducts exerted by a floating kidney.
4. Other causes.

Constipation has already been explained.

Gastric dilatation was at one time thought to be due to obstruction to the duodenum and pylorus, caused by the floating kidney so commonly found associated with it ; it is doubtful if such can be the cause. The position of the stomach and the lack of tone so common in such cases doubtless extends to the muscular wall of the stomach, and in these conditions one finds sufficient explanation for the dilated condition which is rarely pronounced.

The indications for the treatment of enteroptosis as originally recommended by Glénard, are as follows :—

1. The intestines must be elevated and kept in their new position.
2. The abdominal pressure must be increased.
3. The bowels must be regulated.
4. The secretions of the intestinal glands must be increased.
5. The digestion and nutrition must be regulated and stimulated.
6. The whole organism must be strengthened.

These indications, in many instances, are met by the *body binder* so applied as to exert upward pressure and thus support the prolapsed organs while it increases the intra-abdominal pressure. It may be made by ordinary grey cotton pinned firmly about the body.

Then mild purgatives are needed. Massage of the abdomen often does good in stimulating the movements of the bowel and giving tone to the abdominal muscles. The same may be said of electrical (Faradic) applications.

Then the use of alkalies and the choice of such a diet as is most nourishing and easily digested are of importance.

Recently both hot and cold baths have come into favor as giving general tone to the circulation, and Buxbaum recommended the cold Sitz bath as inducing favorable results, especially by reason of its action upon the intestinal circulation and secretion. He advises that they be taken daily for two—five minutes.

The chief advance in the treatment of the condition since 1886 has been in surgery, by which some brilliant results have been brought about. Recently reported cases have come from Treves, in England, who sutured the liver to the abdominal wall; Bernhardt, Ferrari, Terrier and Hartmann, in Europe, and Byron B. Davis, Stengel and Beyea, in America. Gastropexy and gastrorrhaphy have, in different cases, given good results; while in Stengel's case, operated on by Dr. Beyea, the gastro-hepatic omentum and gastro-phrenic ligament were shortened by a tuck made with multiple sutures, thus bringing the stomach up towards its normal place.

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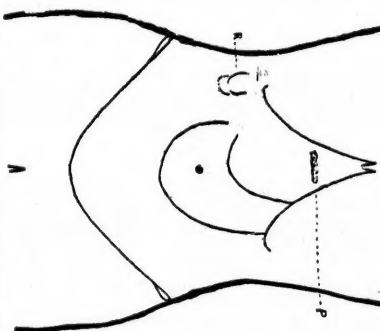


FIG. III. Gaseous Inflation. Stomach about 5 inches wide.

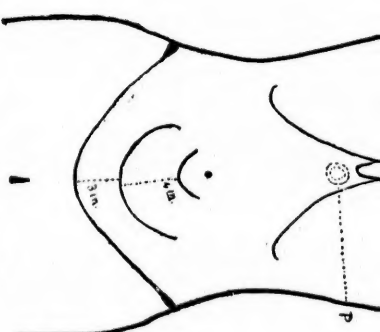


FIG. IV. Gaseous Inflation.

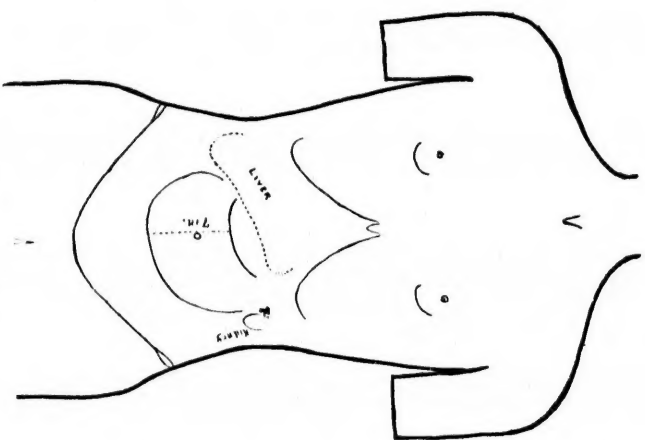


FIG. V. Gaseous Inflation.

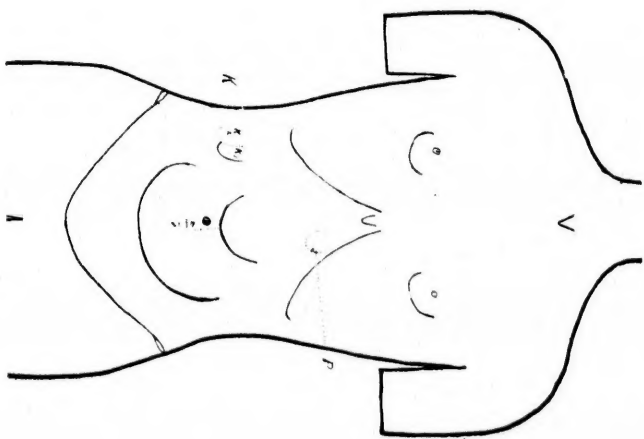


FIG. VI. Gaseous Inflation.

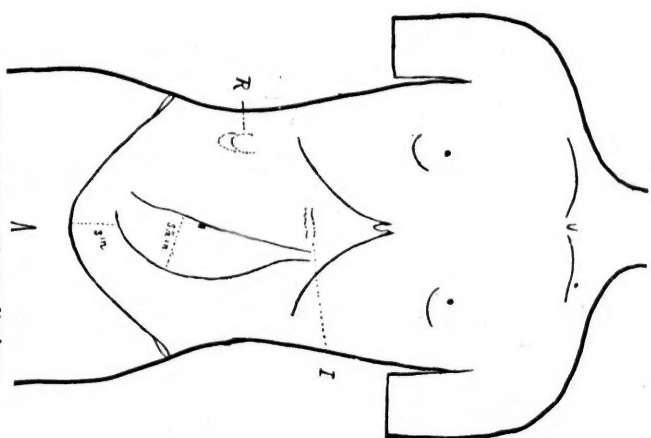


FIG. I. Outline of Gastro-diaphane.

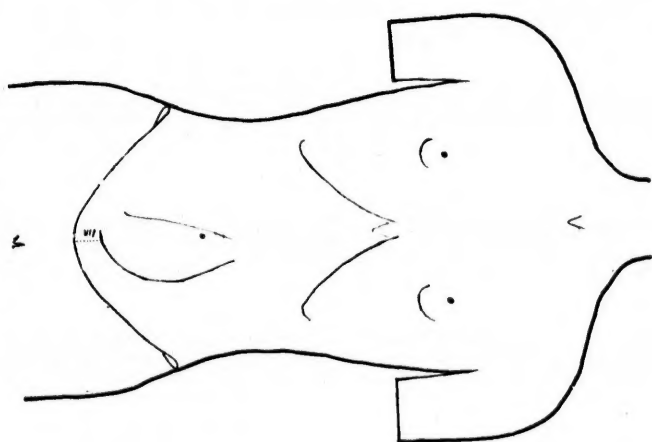


FIG. II. By Gastro-diaphane.

